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IS 9254 (1979): Supplier's data sheet for electrostatic percipitators [MED 17: Chemical Engineering Plants and Related Equipment]

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IS : 9254 - 1979

Indian Standard

(Reaffirmed 2006)

SUPPLIER'S DATA SHEET FOR ELECTROSTATIC PRECIPITATORS

Chemical Engineering Sectional Committee, EDC 57; Chemical Engineering Standards Subcommittee, EDC 57 : 1 [Ref : Doc : EDC 57 (3139)]

1. Scope — Covers technical data to be supplied by a manufacturer or supplier of an electrostatic precipitator to a purchaser.

2. Supplier's Data Sheet

SUPPLIER'S DATA SHEET FOR ELECTROSTATIC PRECIPITATORS

Operating and Performance Data

1) Volume (dry or wet)......Nm³ / h at operating conditions..............................

2) Temperature...........°C at operating conditions..............................

3) Operating pressure at inlet to electrostatic precipitator..............................mm water gauge

4) Inlet dust loading (dry/wet)..............................g/Nm³

5) Guaranteed efficiency..............................percent

6) Guaranteed outlet dust loading (dry/wet)..............................mg/Nm³

7) Pressure drop across precipitators flange to flange..............................Pa

8) Gas velocity..............................m/s

9) Treatment time..............................seconds

Precipitator Arrangement

10) Number of precipitators..............................

11) Whether precipitators are arranged in parallel or series..............................

12) Fields (number and length) per precipitator..............................

13) Number of HV sections per field..............................

14) Number of HV sections per precipitator..............................

15) Casing:

  a) Material..............................

  b) Standard to which the material conforms..............................

  c) Thickness ... .mm

16) Inlet connection:

  a) Size..............................

  b) Material and thickness..............................

  c) Standard to which the material conforms..............................

(*Continued*)

Adopted 27 August 1979

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NEW DELHI 110002

SUPPLIER'S DATA SHEET FOR ELECTROSTATIC PRECIPITATORS — *Contd*

17) Outlet connection:

    a) Size......
    b) Material and thickness......
    c) Standard to which the material conforms......

18) Casing design pressure......Pa
19) Number and type of hoppers per precipitator......
20) Hopper material and thickness......mm
21) Minimum hopper valley angle......degrees
22) Total hopper capacity per precipitator......m^3
23) Whether hopper and insulator boxes are steam jacketed......
24) Pressure of steam......MPa
25) Steam consumption......
26) Hopper accessories......
27) Size of hopper discharge......
28) Insulator compartment material and thickness......mm
29) Number of insulator boxes......
30) Penthouse material and thickness......mm
31) Surface area per precipitator:

    a) Roof......m^2
    b) Casing......m^2
    c) Hoppers......m^2
    d) Overall dimensions of assembled precipitator......
    e) Others......

32) Number, type and size of access doors per precipitator:

    a) Roof......
    b) Casing......
    c) Inlet connection......
    d) Outlet connection......
    e) Hoppers......
    f) Insulator compartments......
    g) Others......

33) Gas distribution arrangement:

    a) Whether rapping for gas distribution screen given......
    ......

Collecting System per Precipitator

34) Type......
35) Number of gas passages......

(*Continued*)

SUPPLIER'S DATA SHEET FOR ELECTROSTATIC PRECIPITATORS — *Contd*

36) Spacing of gas passages..........mm

37) Collecting electrode:

   a) Material and its conformity to standard
   b) Thickness ....mm

38) Collecting electrode effective length..........m

39) Collecting electrode effective height..........m

40) Cross-sectional area of each collecting electrode..........

41) Total collecting electrode area (projected) per precipitator..........
....

42) Number of collecting electrode rappers per field..........

43) Number of collecting electrode rappers per precipitator..........
....

High Voltage System

44) Type of electrode system (frame/wire and weight self supporting) and method of attachment..........

45) Discharge electrode:

   a) Type..........
   b) Material ....
   c) Thickness ....

46) Effective length of each discharge electrode..........

47) Total effective length of discharge electrodes per precipitator..........
....

48) Total number of electrodes per precipitator..........

49) Total discharge electrode rappers per field..........

50) Total discharge electrode rappers per precipitator..........

Rapping System

51) Type of rapping..........

52) Arrangement for rapping (top, side or any other)..........

53) Acceleration of rapping:

   a) Minimum..........
   b) Maximum..........

54) Rapper electricals..........

High Voltage Electrical System

55) Type of transformer rectifier ....

56) Number of transformer rectifiers per precipitator ....

(*Continued*)

SUPPLIER'S DATA SHEET FOR ELECTROSTATIC PRECIPITATORS — *Contd*

57) Type of control..

58) Transformer rectifier rating (each):

  a) kV (peak/mean)..
  b) mA (mean)..
  c) mA/m^2 of collecting electrode..

59) Number and type high voltage switches per precipitator if any..

....

60) Key interlocks (Yes/No):

  a) Control cabinets..
  b) Transformer rectifiers..
  c) Access doors..

61) Whether proofed transformer rectifiers (Yes/No)..

62) Maximum ambient temperature for transformer rectifiers..........................°C

63) Maximum ambient temperature for transformer rectifier control cabinets..........................°C

64) Estimated power consumption per precipitator:

  a) Transformer rectifier..........................kW
  b) Rappers..........................kW
  c) Insulator heaters and blowers (if applicable)..........................kW
  d) Hopper heaters (if applicable)..........................kW
  e) Others..

Other Auxiliary Equipment

65) Heat insulation (type and thickness)..........................mm

66) Cladding (type and thickness)..........................mm

67) Total surface area for heat insulation (estimated)..........................m^2

68) Location (indoor or outdoor)..

69) If outdoor, weather enclosure, if any..

70) Guarantee..

71) Access facilities like ladders, stairways, platforms and walkways provided (Yes/No)..............

72) Painting (Yes/No):

  a) Shell....................................
  b) Collecting electrode...............
  c) Other parts..........................

73) Type and capacity of hopper heating..........................kW

74) Insulator compartment heating system (number)..

75) Gas distribution, model included (Yes/No)..

76) Scale of model..

77) Dust handling/condition equipment included (Yes/No)..

(*Continued*)

SUPPLIER'S DATA SHEET FOR ELECTROSTATIC PRECIPITATORS — *Contd*

Prime Gas Mover

78) Prime gas mover included (state also number and type)..

....

79) Type of starters...

80) Rating of motors...

81) Type of couplings..

82) Baseplate ....

83) Type of impeller...

84) Material and thickness of casing..

85) Operating capacity.. kW

86) Installed capacity.. kW

87) Control system...

Remarks

88) General arrangement drawing of precipitator is provided (Yes/No)..

89) Other salient features...

EXPLANATORY NOTE

The information given by a manufacturer or a supplier according to the above data sheet will enable a purchaser to evaluate the product before he finally decides to purchase a particular brand or type. The International System (SI) Units have been used in the standard. For guidance, the relationship of pressure unit Pascal (Pa) to other units is given below:

$$1 \text{ Pascal (Pa)} = 1 \text{ newton/square metre (N/m}^2\text{)}$$
$$= 0{\cdot}102 \text{ kgf/m}^2$$

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